

STATEMENT OF THE CLAIMS

1. (previously presented) A fracture fixation pin, comprising:
  - a) a solid first portion having a first diameter and first threads of a first thread diameter, said first portion having a tip at one end and a second end;
  - b) a solid second portion coupled to said second end of said first portion, said second portion having a second diameter larger than said first diameter, and second threads of a second thread diameter larger than said first thread diameter, said second threads extending in a same direction as said first threads; and
  - c) a solid non-threaded shaft portion coupled to said second portion, said shaft portion having a cross-sectional dimension which does not exceed a dimension of said second diameter,

wherein said second portion is provided with a plurality of longitudinal grooves extending crosswise through at least one of said second threads, said grooves being located adjacent said shaft portion and spaced-apart about an outer circumference of said second portion.

2. (original) A fracture fixation pin according to claim 1, wherein:

said first and second threads are continuous.

3. (original) A fracture fixation pin according to claim 1, wherein:

said tip includes a plurality of cutting flutes.

4. (original) A fracture fixation pin according to claim 1, wherein:

said tip is substantially conical and includes a surface angled at 30° relative to a longitudinal axis.

5. (previously presented) A fracture fixation pin according to claim 1, wherein:

said first portion has a first length of approximately 2.55 inches and a first diameter of approximately 0.125 inch, and said second portion has a second length of approximately 0.6 inch and a second diameter of approximately 0.156 inch.

6. (original) A fracture fixation pin according to claim 1, wherein:

said shaft portion is substantially cylindrical.

7. (original) A fracture fixation pin according to claim 1, wherein:

said shaft is frangibly coupled to second portion.

8. (original) A fracture fixation pin according to claim 1, wherein:

a channel is provided about said pin between said second portion and said shaft portion.

9. (original) A fracture fixation pin according to claim 1, wherein:

said shaft has cross-sectional dimension smaller than said second diameter of said second portion.

10. (original) A fracture fixation pin according to claim 1, wherein:

said pin is not provided with a head portion.

11. (original) A fracture fixation pin according to claim 1, wherein:

all threads on said first portion have said first thread diameter.

12. (original) A fracture fixation pin according to claim 1, wherein:

said pin is made of metal.

13. (canceled)

14. (previously presented) A fracture fixation pin according to claim 1, wherein:

said plurality of grooves includes exactly three grooves spaced apart 120° about said circumference of said second portion.

15. (previously presented) A fracture fixation pin according to claim 1, wherein:

each of said grooves has a depth which extends below said second threads.

16. (currently amended) A fracture fixation pin system, comprising:

a) a pin including

i) a first portion having a first diameter and first threads of a first thread diameter,  
said first portion having a tip at one end and a second end,

ii) a second portion coupled to said second end of said first portion, said second portion having a second diameter larger than said first diameter, and second threads along substantially an entirety thereof, said second threads of a second thread diameter larger than said first thread diameter, said first and second threads being continuous with each other and having a common pitch and thread depth, and

iii) a non-threaded shaft portion coupled to said second portion, said shaft portion having a cross-sectional dimension which does not exceed a dimension of said second diameter,

said second portion adjacent said shaft portion defining a plurality of longitudinal spaced apart negative spaces about an outer circumference thereof; and

b) a driver member including a socket having structure adapted to interfere with said negative spaces.

17. (original) A fracture fixation pin system according to claim 16, further comprising:

c) a mill tool having structure adapted to remove bone and define an opening in the bone into which said socket of said driver member can be inserted.

18. (currently amended) A fracture fixation pin, comprising:

a) a first portion having a first diameter and first threads of a first thread diameter, said first portion having a tip at one end and a second end; and

b) a second portion having a first end coupled to said second end of said first portion and a second free end, said second portion having a second diameter larger than said first diameter, and second threads of a second thread diameter larger than said first thread

diameter, said first and second threads being continuous with each other and having a common pitch and thread depth, wherein said second free end is provided with a plurality longitudinal grooves spaced-apart about an outer outermost circumference of said second portion and extending crosswise through at least one of said second threads.

19. (original) A fracture fixation pin according to claim 18, wherein:

said plurality of grooves includes three grooves spaced apart 120° about said circumference of the second portion.

20. (original) A fracture fixation pin according to claim 18, wherein:

each of said grooves has a depth which extends below said second threads.

21. (currently amended) A fracture fixation pin system, comprising:

a) a one-piece pin including

i) a non-hollow first portion having a first diameter and first threads of a first thread diameter, said first portion having a tip at one end and a second end, and  
ii) a non-hollow second portion having a first end coupled to said second end of said first portion and a second free end, said second portion having a second diameter larger than said first diameter, and second threads of a second thread diameter larger than said first thread diameter, said first and second threads being continuous with each other and having a common pitch and thread depth, wherein said second free end is provided with a plurality of longitudinal grooves spaced-apart about an outer circumference of said second portion; and

b) a driver member including a socket having structure adapted to interfere with said grooves on said second portion of said pin.

22. (original) A fracture fixation pin system according to claim 21, further comprising:

c) a mill tool having structure adapted to remove bone and define an opening in the bone into which said socket of said driver member can be inserted.

23. (currently amended) A fracture fixation pin, comprising:

a pin having a threaded portion provided with threads and a shaft portion, said threaded portion including a tip end and an opposite end, said opposite end including a plurality of longitudinal grooves extending parallel to a longitudinal axis of said pin and located adjacent said shaft portion and spaced-apart about an ~~outer~~ outermost circumference of said threaded portion.

24. (previously presented) A fracture fixation pin according to claim 23, wherein:

said grooves interrupt said threads.

25. (previously presented) A fracture fixation pin according to claim 23, wherein:

said plurality of grooves comprise exactly three grooves spaced apart 120° about the circumference of the threaded portion.

26. (previously presented) A fracture fixation pin according to claim 23, wherein:

each of said grooves has a depth which extends below said threads at a location of said grooves.

27. (previously presented) A fracture fixation pin according to claim 23, wherein:

said threaded portion includes a first portion having a first diameter and first threads of a first thread diameter, and a second portion having a second diameter larger than said first diameter and second threads of a second thread diameter larger than said first thread diameter.

28. (original) A fracture fixation pin according to claim 27, wherein:

said first and second threads are continuous with each other.

29. (original) A fracture fixation pin according to claim 27, wherein:

said first and second threads have a common pitch.

30. (original) A fracture fixation pin according to claim 27, wherein:

said first and second threads have a common thread depth.

31. (currently amended) A fracture fixation pin system, comprising:

a) a pin having a first portion provided with threads and a shaft portion, said first portion including a tip end and an opposite end, said opposite end including a plurality of longitudinal grooves extending crosswise through at least one of said threads and located

adjacent said shaft portion and spaced-apart about an outer circumference of said first portion; and

b) a driver member including a socket having structure adapted to interfere with said grooves on said first portion of said pin.

32. (original) A fracture fixation pin system according to claim 31, further comprising:

c) a mill tool having structure adapted to remove bone and define an opening in the bone into which said socket of said driver member can be inserted.